

REMARKS

Claims 1, 3-4, 6-7, 9-10, and 12 were presented for examination. The Office Action dated September 22, 2006 rejects claims 1, 3-4, 6-7, 9-10, and 12. This paper amends claims 1 and 7. Claims 1, 3-4, 6-7, 9-10, and 12 remain pending in this application.

Rejection under 35 U.S.C. 103(a)

The Office Action rejects claims 1, 3-4, 6-7, 9-10, and 12 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2001/0050914 to Akahane et al. ("Akahane") in view of Applicant's admitted prior art ("AAPA"). Applicants do not admit that Akahane is prior art and continue to reserve the right to remedy any defects in the Affidavit under 37 U.S.C. §1.131 submitted in Applicants' Response to Final Rejection filed November 21, 2005. Nonetheless, Applicants respectfully traverse this rejection, since Akahane, even if assumed to be prior art, and AAPA, taken in part or in combination, fail to teach or suggest all the elements of the Applicants' claimed invention.

The Applicants' invention, as now set forth in representative Claim 1, recites, in pertinent part, a router that has a plurality of router interfaces through which packets are received from a plurality of address domains. A separate routing table in the router is dedicated to each domain and each router interface is associated with one of the routing tables. In addition, the router executes a single IP stack to receive a packet from any of the router interfaces and to identify the associated routing table in the router for handling the packet.

Akahane discloses the use of separate routing tables for VPNs and a process for determining which routing table to use for forwarding a particular IP packet. The Office Action states that Akahane "does disclose determining

the one routing table by a router that contains means for receiving and processing IP packets and identifying an appropriate routing table for received packets as shown above...”, citing paragraph 39 of Akahane. Paragraph 39 of Akahane discloses forwarding packets along hops between different routers (e.g. edge router 9 forwards to core router 17), each router having its separate IP routing stacks and tables. Apparently the Office Action attempts to read the “identifying an appropriate routing table” language of Applicants’ claims onto the forwarding function between the edge router 9 and core router 17 of Akahane as described in paragraph 39, wherein edge router 9 searches a VPN routing table to determine a destination IP address of core router 17. This is clearly not what Applicants’ claims intend to encompass. Applicants’ claim 1 clarifies that the claimed method includes steps of “dedicating a separate routing table in the router to each address domain of the plurality of address domains”, and “executing a single IP stack to receive a packet from any of the router interfaces and to identify the associated routing table in the router for handling the packet” – i.e. the associated routing table is one of a plurality of routing tables that exists within the single router.

This being clarified, the Office Action admits that Akahane does not expressly disclose executing a single IP stack to receive packets from any of the interfaces. And, in fact, Akahane does not address IP stacks, or route table management, at all. Thus, Akahane fails to teach or suggest the Applicants’ claimed step of “executing a single IP stack to receive a packet from any of the router interfaces and to identify the associated routing table in the router for handling the received packet”.

The Office Action, however, attempts to fill this omission in Akahane by adding to Akanane information from paragraph [0003] of the Applicants’ Background. That is, the Office Action adds to Akahane one IP stack that receives packets from any of the router interfaces in order to try to arrive at

the Applicants' claimed invention. The Applicants find this improper because 1) the proposed combination would technically frustrate the purpose of Akahane; and 2) the Office Action is relying on impermissible hindsight reasoning.

The Applicants' Background teaches the evolution of routing. Two different prior art router architectures are taught. According to the router of Applicants' FIG. 1 as described in the Applicants' Background, a router operates in a single address domain and has a single routing table managed by a single IP stack that receives packets from the multiple router interfaces. This is the original, classical router.

The Applicants' Background then proceeds to describe an evolution in routing referred to as "virtual routing". According to the router of Applicants' Fig. 2 of the Applicants' Background, a router consists of multiple virtual routers. Each virtual router includes an IP stack and a routing table associated with an address domain, and thereby all the router interfaces associated with the address domain. Each virtual router functions as a traditional, classical router within its address domain. It is understood in the art that this is how routers operating in separate address domains keep the networks in those domains non-overlapping and secure (Akahane [0005], Applicants' Background [0007]). Akahane addresses VPN identification in a system such as that described in Applicants' Fig. 2. In fact, with regard to the Applicants' claimed invention, Akahane discloses no more than the Applicant's Background Fig. 2.

The Applicants have identified a problem with the router architecture of Applicants' Background Fig. 2. That is, when route changes occur on networks common to different address domains, each IP stack for each table associated with the address domains will execute the route change. This presents a scalability issue. The Applicants therefore invented a way to

present a separate routing table for each address domain, while executing one IP stack to handle packets arriving from all address domains.

(Applicants' Specification [0029].) This, then, is a third, new router architecture designed to work with multiple address domains. Its similarity in drawings to the first, Background router of Fig. 1, is irrelevant.

Akahane addresses VPN identification in a system such as that described in the Applicants' Background Fig. 2. Akahane does not specifically describe the IP stack portion of its operation. The Office Action attempts to fill in this information with a single IP stack as described in Applicants' background Fig. 1. It should be clear that one skilled in the art of multiple address domain routing, armed with the Applicants' Background, would not understand this. IP stacks are associated with IP address domains, as the Applicants' Background teaches. If there is one address domain, there can be a single IP stack (Applicants' Background [0003], Fig. 1). If there are multiple address domains, there will be multiple IP stacks (Applicants' Background [0007], Fig. 2). That is what the Applicants' Background teaches. One skilled in the art, working with the system of Akahane, would not try to apply the knowledge provided by Fig. 1 of Applicants' Background, as this would technically frustrate the workings of Akahane.

Furthermore, one skilled in the art would not reasonably try to modify Akahane / Applicants' Background Fig. 2 to arrive at the Applicants' claimed invention UNLESS 1) he realized some reason to do so; and 2) he could then think of a way to do so (such as the mapping array set forth in Applicants' dependent Claim 2). This can only come from impermissible hindsight in light of the Applicants' disclosure and claims.

Each other independent claim recites language similar to that of claim 1, and therefore is patentable for at least the reasons provided in connection with

claim 1. Each dependent claim depends directly or indirectly from one of the patentable independent claims, and incorporates all of its respective limitations and, therefore, is patentably distinguishable over the cited references for at least those reasons provided in connection with the independent claims. Each dependent claim also recites an additional limitation, which, in combination with the elements and limitations of its independent claim, further distinguishes that dependent claim from the cited references. Applicants respectfully request withdrawal of the rejection of these claims.

CONCLUSION

In view of the amendments and arguments made herein, Applicants submit that the application is in condition for allowance and requests early favorable action by the Examiner.

If the Examiner believes that a telephone conversation with the Applicant's representative would expedite allowance of this application, the Examiner is cordially invited to call the undersigned at (508) 303-2003.

Respectfully submitted,

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